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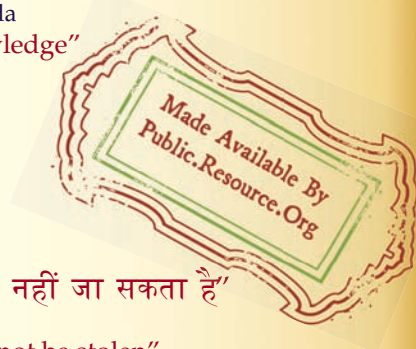
IS 12546 (1988): Basic safety requirements for air cargo loading equipment [TED 14: Aircraft and Space Vehicles]



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Indian Standard

BASIC SAFETY REQUIREMENTS FOR AIR CARGO LOADING EQUIPMENT

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Indian Standard

BASIC SAFETY REQUIREMENTS FOR AIR CARGO LOADING EQUIPMENT

0. FOREWORD

0.1 This Indian Standard was adopted by the Bureau of Indian Standards on 26 December 1988, after the draft finalized by the Air Cargo Handling Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 This standard specifies the basic safety requirements of air cargo loading equipment. The general requirements have been covered in

IS : 10494-1983*.

0.3 In preparing this standard, assistance has been derived from IATA/AHM-913 'Basic safety requirements for aircraft handling equipment' issued by the International Air Transport Association (IATA).

*General requirements for air cargo loading equipment.

1. SCOPE

1.1 This standard specifies the basic safety requirements for air cargo loading equipment.

NOTE — Where governmental legislation differs from any requirements covered in this standard, the more stringent condition should apply.

2. GENERAL

2.1 Considerable importance is attached to having equipment into which the essential safety aspects have been incorporated as part of the basic design. It is particularly necessary when designing equipment to take into account the adverse conditions which frequently prevail in ramp areas; for example, congested vehicle movement, exposure to weather, night operation, noise from aircraft and other vehicles, and difficult communications.

2.2 All equipments or any component thereof, the failure of which could be hazardous, shall be designed to be fail-safe.

3. PERSONNEL WORKING SURFACES

3.1 Personnel work platforms and walkways shall have a high traction surface.

3.2 Personnel work platforms and walkways shall have adequate handrail and/or guard rail protection.

3.3 Stairs, ramps, ladder rungs, cleats or treads, shall be of non-slip material.

3.4 Ladders and stair treads shall be designed to support a minimum working load of 0.89 kN.

3.5 Landing and working surfaces shall be designed to 1.117 kN for each person occupying

the said landing and/or working surface at the same time.

3.6 On open cab vehicles with passenger seat(s), a hip guard minimum 8 cm high above the seat surface, shall be provided on the outside edge of the outside seat(s).

4. STABILIZERS

4.1 Self-propelled type units equipped with power-actuated stabilizers shall have an operator warning device to indicate when the stabilizers are not in the stowed position.

4.2 Lift type units exposed to blast, wind, and/or irregular surfaces, shall be equipped with stabilizing devices, which preclude the unit overturning when exposed to wind or blast up to 193 km/h in the lowered position.

4.3 The stability, as given in 4.2, shall determine at which point during elevation, the stabilizing devices shall be necessary. A safety device shall be provided to ensure that this elevation is not exceeded unless the stabilizing devices are developed and/or engaged.

4.4 Retraction of the stabilizing device shall not be possible under normal or emergency conditions until the unit has been lowered to within the stability requirements of 4.2.

4.5 Stabilizer activating devices shall be located so as not to expose the operator to personal injury.

4.6 An interlock shall be provided to prevent driving the vehicle when the stabilizers are not fully retracted.

4.7 Emergency-raising stabilizer controls shall be provided and shall be so located as not to expose the operator to injury.

4.8 Stabilizers shall be marked with black and yellow reflective tape. Stabilizer pads shall be painted red.

4.9 The stabilizers shall not collapse in the case of a system failure.

5. DOORS

5.1 All doors shall be provided with securing devices to retain them in the open and/or closed position. These devices shall be capable of withstanding blast or ambient winds and shall be installed so that the doors, when open, do not create a personal injury hazard.

6. COMPONENTS

6.1 All components that exceed 36 kg, or that exceed 15 kg (where only one man has access to the unit for handling), shall have provisions for attaching lifting or handling devices.

7. MACHINERY GUARDS

7.1 Sprockets, gears, chains, belts, fans and pulleys, or other nip or pinch point hazards which are not protected by vehicle structures or covers, shall be guarded.

8. FUEL AND FLUID REPLENISHING

8.1 Fuel lines shall be secured with a minimum of 5 cm clearance to exhaust and electrical systems.

8.2 Fuel tank(s) shall be located and installed so that any overflow during filling, or any leakage from the tank, lines or fittings, shall not impinge on the engine, exhaust, electrical system, or other ignition sources or enter the operator's compartment.

8.3 Fuel tank(s) shall be located for maximum protection from collision damage.

9. EXHAUST

9.1 Internal combustion engines shall be fitted with a baffle-type muffler.

9.2 The exhaust system, beyond the manifold, shall be supported at least 76 mm clear of combustible materials, excluding flexible mountings, and at least 50 mm clear of fuel, hydraulic and electrical system parts and shall not be subject to drippage of fuel, oil or grease.

9.3 The surface and the discharge of exhaust systems shall be so located that they shall not expose employees and/or materials to injury or damage.

10. VISIBILITY

10.1 Vehicle operators shall have clear and unimpaired visibility.

10.2 All glass shall be of safety or tempered type and shall provide maximum visibility based upon the functional requirements of the unit.

10.3 Any vehicle equipped with a windshield shall be provided with a powered windshield wiper giving a wipe area of not less than 60 percent of the glazed area. A sun visor of suitable size shall be provided.

10.4 On enclosed cab-equipped vehicles, the windshield shall be provided with a de-fogger and/or de-froster.

10.5 Reflective material, or preferably fluorescent paint shall be applied on all the corners.

11. TOW-BARS AND COUPLINGS

11.1 The tongues or tow-bars of units shall be designed to minimize exposure to pinch points during coupling.

11.2 A stop shall be provided to prevent the tow-bar coming into contact with the ground when dropped.

11.3 The towing eye and the tow-bar shall be made clearly visible in poor lighting conditions in order to avoid accidents.

12. EMERGENCY BUTTONS

12.1 Emergency engine stop button(s) (red mushroom type) shall be provided. These shall be installed at convenient positions on the unit to enable immediate shut-down in the event of an emergency. The location and number shall be called up by the vendee.

13. VEHICLE SPEED

13.1 Positive, non-jerking slow speed is required for the final positioning of a unit/vehicle to the aircraft.

14. AIRCRAFT PROTECTION

14.1 Any part of a vehicle coming close to or liable to touch the aircraft shall have suitable padding.

15. BRAKERS

15.1 A braking system shall be provided to stop vehicles under empty and full load conditions.

15.2 A parking/emergency brake shall be provided which will restrain the vehicle when fully loaded on an incline of 5 percent (or more, if specified by the user).

16. FIRE PREVENTION

16.1 A fire extinguisher of suitable type and capacity shall be provided.

17. ENGINE OPERATION

17.1 For self-propelled vehicles, it shall not be possible to start the engine unless the shifting lever is in neutral or park position.

17.2 For self-propelled equipment with hand throttle, it shall not be possible to engage the forward or reverse gear unless the hand throttle is in the idle position.

18. CONTROLS

18.1 Controls and warning lights shall be grouped and located so as to be convenient to the operator from his normal operating station(s). Where, there is more than one station, interlocks shall be provided at each station to render inoperative the controls of all other stations.

18.2 Controls and warning lights shall be properly and permanently identified, preferably by pictograms [see IS : 12678 Graphical symbols for operators on ground equipment controls].

18.3 All operational control shall move in the direction of travel for the function which they control and shall be of the deadman type unless the control is set to achieve a function to permit the users to accomplish another task. In these cases, such set controls shall be detented or similarly locked into the operating position to prevent inadvertent deactivation or reversing. Such controls shall be readily available to the operator(s). 'Emergency only' operating controls need not meet this requirement.

18.4 Hand and foot controls shall be sized and spaced to provide easy operation with a gloved hand and/or booted foot dependent on the control. Consideration shall be given to environmental weather conditions in which the unit will operate.

18.5 Foot controls shall be a minimum of 5×8 cm and shall be provided with a non-slip material.

18.6 Controls and controlling circuits shall be designed in such a manner that the failure within a control or its circuitry will not introduce an unsafe operating condition.

18.7 Adequate illumination shall be provided for the controls of the unit.

BUREAU OF INDIAN STANDARDS

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 331 01 31, 331 13 75

Telegrams : Manaksanstha
(Common to all offices)

Regional Offices:

Telephone

Central: Manak Bhavan, 9 Bahadur Shah Zafar Marg,
NEW DELHI 110002

331 01 31, 331 13 75

*Eastern: 1/14 C.I.T. Scheme VII M, V.I.P. Road, Maniktola,
CALCUTTA 700054

36 24 99

Northern: SCO 445-446, Sector 35-C, CHANDIGARH 160036

2 18 43, 3 16 41

Southern: C.I.T. Campus, IV Cross Road, MADRAS 600113

41 24 42, 41 25 19, 41 29 16

†Western: Manakalaya, E9 MIDC, Marol, Andheri (East),
BOMBAY 400093

6 32 92 95

Branch Offices:

'Pushpak' Nurmohamed Shaikh Marg, Khanpur, AHMADABAD 380001

2 63 48, 2 63 49

‡Peenya Industrial Area, 1st Stage, Bangalore-Tumkur Road,
BANGALORE 560058

38 49 55, 38 49 56

Gangotri Complex, 5th Floor, Bhadbhada Road, T.T. Nagar,
BHOPAL 462003

6 67 16

Plot No. 82/83, Lewis Road, BHUBANESHWAR 751002

5 36 27

53/5 Ward No. 29, R.G. Barua Road, 5th By-lane, GUWAHATI 781003

3 31 77

5-8-56C L.N. Gupta Marg (Nampally Station Road),
HYDERABAD 500001

23 10 83

R14 Yudhister Marg, C Scheme, JAIPUR 302005

6 34 71, 6 98 32

117/418 B Sarvodaya Nagar, KANPUR 208005

21 68 76, 21 82 92

Patliputra Industrial Estate, PATNA 800013

6 23 05

T.C. No. 14/1421, University P.O. Palayam, TRIVANDRUM 695034

6 21 04, 6 21 17

Inspection Offices (With Sale Point):

Pushpanjali, First Floor, 205A West High Court Road, Shankar Nagar
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2 51 71

Institution of Engineers (India) Building, 1332 Shivaji Nagar,
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5 24 35

*Sales Office in Calcutta is at 5 Chowringhee Approach, P.O. Princep Street, Calcutta 700072

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†Sales Office in Bombay is at Novelty Chambers, Grant Road, Bombay 400007

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‡Sales Office in Bangalore is at Unity Building, Narsimharaja Square, Bangalore 560002

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